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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/822,080B

DATE: 03/25/2002

TIME: 10:41:43

Input Set : A:\C2420011.app

Output Set: N:\CRF3\03252002\I822080B.raw

3 <110> APPLICANT: Stewart Jr., C. Neal
 4 Broadway, Roxanne M.
 6 <120> TITLE OF INVENTION: CABBAGE PROTEINASE INHIBITOR GENE CONFERS RESISTANCE
 7 AGAINST PLANT PESTS
 9 <130> FILE REFERENCE: 19603/2420
 C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/822,080B
 C--> 12 <141> CURRENT FILING DATE: 2001-03-20
 14 <160> NUMBER OF SEQ ID NOS: 12
 16 <170> SOFTWARE: PatentIn Ver. 2.1
 18 <210> SEQ ID NO: 1
 19 <211> LENGTH: 809
 20 <212> TYPE: DNA
 21 <213> ORGANISM: Brassica oleracea
 23 <220> FEATURE:
 24 <221> NAME/KEY: source
 25 <222> LOCATION: (1)..(809)
 26 <223> OTHER INFORMATION: Serine proteinase inhibitor
 28 <400> SEQUENCE: 1
 29 gatgaatcct atgtttttact tcctttttgct cttttaccact gttttggccg cgaccgcaaa 60
 30 cgctggacca gttctcgaca ctgatgggtga tatcatattc gacggcagtt actacgttct 120
 31 cccctcatc tggggcccta cagggtggcg cctaactctc gtctcccgtc gtggcaacca 180
 32 gtgtccctc tttatcgga aggagcggtc agagggtcaac aggggcattc ccgtgaaatt 240
 33 ctcaaaactgg aggtccagag ttgggttcgt cccgaagaa gagaacctca acatcaagat 300
 34 ggatgtcgaa cctacgatct gcgtcagtc agcttattgg tgggtcactc cagccccag 360
 35 tccctggagg tcgttgttca tagcggttg tccaaagcca gaagctggag gagaagattc 420
 36 gtogaggagt ttcttcaga tcaagaaaac tgaagccaaa cttaacgctt acaagtttgt 480
 37 attctgtagt gagggtaacg attgcatcga tgtcggtaaa aacgaggaag gtggcggttcg 540
 38 gggtttggtt ttaggtctta cgccaccatt cgctacccca ttcgagggtg tgttcgtgaa 600
 39 agctactggg acagacactt catccaagac tatgtctatt atctgagaga aattaaagac 660
 40 cacttaataa agaggataag tgttataact tacctctaata aataaaactc tatctatgta 720
 41 tgatgttttc tttgttcacg gatcatcatc atgtatggaa taaaacatct ttcctttggt 780
 42 tctaaaaaaa aaaaaaaaaa aaaaaaaaaa 809
 45 <210> SEQ ID NO: 2
 46 <211> LENGTH: 214
 47 <212> TYPE: PRT
 48 <213> ORGANISM: Brassica oleracea
 50 <220> FEATURE:
 51 <221> NAME/KEY: PEPTIDE
 52 <222> LOCATION: (1)..(214)
 53 <223> OTHER INFORMATION: Serine proteinase inhibitor
 55 <400> SEQUENCE: 2
 56 Met Asn Pro Met Phe Tyr Phe Leu Leu Ala Phe Thr Thr Val Leu Ala
 57 1 5 10 15

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59 Ala Thr Ala Asn Ala Gly Pro Val Leu Asp Thr Asp Gly Asp Ile Ile
60           20           25           30
62 Phe Asp Gly Ser Tyr Tyr Val Leu Pro Leu Ile Trp Gly Pro Thr Gly
63           35           40           45
65 Gly Gly Leu Thr Leu Val Ser Arg Arg Gly Asn Gln Cys Pro Leu Phe
66           50           55           60
68 Ile Gly Gln Glu Arg Ser Glu Val Asn Arg Gly Ile Pro Val Lys Phe
69 65           70           75           80
71 Ser Asn Trp Arg Ser Arg Val Gly Phe Val Pro Glu Glu Glu Asn Leu
72           85           90           95
74 Asn Ile Lys Met Asp Val Glu Pro Thr Ile Cys Ala Gln Ser Ala Tyr
75           100          105          110
77 Trp Trp Val Thr Pro Ala Pro Ser Pro Trp Arg Ser Leu Phe Ile Ala
78           115          120          125
80 Ala Gly Pro Lys Pro Glu Ala Gly Gly Glu Asp Ser Ser Arg Ser Phe
81           130          135          140
83 Phe Gln Ile Lys Lys Thr Glu Ala Lys Leu Asn Ala Tyr Lys Phe Val
84 145          150          155          160
86 Phe Cys Ser Glu Gly Asn Asp Cys Ile Asp Val Gly Lys Asn Glu Glu
87           165          170          175
89 Gly Gly Val Arg Gly Leu Val Leu Gly Ser Thr Pro Pro Phe Ala Thr
90           180          185          190
92 Pro Phe Glu Val Val Phe Val Lys Ala Thr Gly Thr Asp Thr Ser Ser
93           195          200          205
95 Lys Thr Met Ser Ile Ile
96           210
99 <210> SEQ ID NO: 3
100 <211> LENGTH: 216
101 <212> TYPE: PRT
102 <213> ORGANISM: G. max (soybean)
104 <220> FEATURE:
105 <221> NAME/KEY: PEPTIDE
106 <222> LOCATION: (1)..(216)
107 <223> OTHER INFORMATION: Kunitz-type trypsin inhibitor 3
109 <400> SEQUENCE: 3
110 Met Lys Ser Thr Ile Phe Phe Leu Phe Leu Phe Cys Ala Phe Thr Thr
111 1           5           10           15
113 Ser Tyr Leu Pro Ser Ala Ile Ala Asp Phe Val Leu Asp Asn Glu Gly
114           20           25           30
116 Asn Pro Leu Glu Asn Gly Gly Thr Tyr Tyr Ile Leu Ser Asp Ile Thr
117           35           40           45
119 Ala Phe Gly Gly Ile Arg Ala Ala Pro Thr Gly Asn Glu Arg Cys Pro
120           50           55           60
122 Leu Thr Val Val Gln Ser Arg Asn Glu Leu Asp Lys Gly Ile Gly Thr
123 65           70           75           80
125 Ile Ile Ser Ser Pro Tyr Arg Ile Arg Phe Ile Ala Glu Gly His Pro
126           85           90           95
128 Leu Ser Leu Lys Phe Asp Ser Phe Ala Val Ile Met Leu Cys Val Gly
129           100          105          110

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131 Ile Pro Thr Glu Trp Ser Val Val Glu Asp Leu Pro Glu Gly Pro Ala
132      115      120      125
134 Val Lys Ile Gly Glu Asn Lys Asp Ala Met Asp Gly Trp Phe Arg Leu
135      130      135      140
137 Glu Arg Val Ser Asp Asp Glu Phe Asn Asn Tyr Lys Leu Val Phe Cys
138 145      150      155      160
140 Pro Gln Gln Ala Glu Asp Asp Lys Cys Gly Asp Ile Gly Ile Ser Ile
141      165      170      175
143 Asp His Asp Asp Gly Thr Arg Arg Leu Val Val Ser Lys Asn Lys Pro
144      180      185      190
146 Leu Val Val Gln Phe Gln Lys Leu Asp Lys Glu Ser Leu Ala Lys Lys
147      195      200      205
149 Asn His Gly Leu Ser Arg Ser Glu
150      210      215
153 <210> SEQ ID NO: 4
154 <211> LENGTH: 218
155 <212> TYPE: PRT
156 <213> ORGANISM: Brassica napus
158 <220> FEATURE:
159 <221> NAME/KEY: PEPTIDE
160 <222> LOCATION: (1)..(218)
161 <223> OTHER INFORMATION: BnD22 drought-induced proteinase inhibitor
163 <400> SEQUENCE: 4
164 Met Lys Thr Phe Phe Leu Val Thr Leu Leu Leu Ala Ala Ala Val Cys
165 1      5      10      15
167 Thr His Gly Arg Glu Gln Val Lys Asp Ser Asn Gly Asn Pro Val Lys
168      20      25      30
170 Arg Gly Ala Lys Tyr Phe Ile Gln Pro Ala Lys Ser Asn Ala Gly Gly
171      35      40      45
173 Leu Val Pro Ala Ala Ile Asn Leu Leu Pro Phe Cys Pro Leu Gly Ile
174      50      55      60
176 Thr Gln Thr Leu Leu Pro Tyr Gln Pro Gly Leu Pro Val Ser Phe Gly
177 65      70      75      80
179 Tyr Glu Pro Val Ile Val Gly Thr Asp Tyr Ile Tyr Thr Ser Thr Thr
180      85      90      95
182 Ile Asn Ile Glu Phe Glu Ser Asp Ile Trp Pro Val Cys Asn Glu Leu
183      100      105      110
185 Ser Lys Leu Trp Ala Val Asp Val Ser Ser Ser Ala Ala Lys Glu Pro
186      115      120      125
188 Ala Ile Ile Ile Gly Gly Glu Ser Thr Ala Pro Asn Ser Leu Phe Lys
189      130      135      140
191 Ile Glu Glu Ala Thr Glu Ala Asn Thr Tyr Lys Leu Thr Thr Ser Tyr
192 145      150      155      160
194 Gly Thr Val Gly Thr Ile Pro Gly Pro Trp Leu Ser Ala Pro Gln Leu
195      165      170      175
197 Ile Val Thr Asn Asp Glu Ser Lys Thr Leu Phe Val Lys Phe Val Lys
198      180      185      190
200 Val Asp Asp Ala Ala Thr Lys Ala Thr Thr Ser Thr Ser Arg Val Glu
201      195      200      205

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203 Lys Leu Gly Leu Lys Met Phe Pro Phe Tyr
204      210                      215
207 <210> SEQ ID NO: 5
208 <211> LENGTH: 17
209 <212> TYPE: PRT
210 <213> ORGANISM: Brassica oleracea
212 <220> FEATURE:
213 <221> NAME/KEY: PEPTIDE
214 <222> LOCATION: (1)..(17)
215 <223> OTHER INFORMATION: BoPI peptide
217 <400> SEQUENCE: 5
218 Val Leu Asp Thr Asp Gly Asp Ile Ile Phe Asp Gly Ser Tyr Tyr Val
219      1                      5                      10                      15
221 Leu
225 <210> SEQ ID NO: 6
226 <211> LENGTH: 37
227 <212> TYPE: PRT
228 <213> ORGANISM: Artificial Sequence
230 <220> FEATURE:
231 <223> OTHER INFORMATION: Description of Artificial Sequence: Kunitz
232      inhibitor family amino-terminal conserved region
234 <220> FEATURE:
235 <221> NAME/KEY: PEPTIDE
236 <222> LOCATION: (1)..(37)
237 <223> OTHER INFORMATION: Xaa at positions 5, 7, 22, 27-31 and 33 is any
238      amino acid
240 <400> SEQUENCE: 6
W--> 241 Leu Ile Val Asp Xaa Asp Xaa Glu Asp Asn Thr Tyr Asp Gly Arg Lys
242      1                      5                      10                      15
W--> 244 His Asp Glu Asn Gln Xaa Leu Ile Val Met Xaa Xaa Xaa Xaa Xaa Tyr
245      20                      25                      30
W--> 247 Xaa Leu Ile Val Met
248      35
251 <210> SEQ ID NO: 7
252 <211> LENGTH: 21
253 <212> TYPE: DNA
254 <213> ORGANISM: Artificial Sequence
256 <220> FEATURE:
257 <223> OTHER INFORMATION: Description of Artificial Sequence:
258      Oligonucleotide
260 <400> SEQUENCE: 7
261 ggcagttact acgttctccc c
264 <210> SEQ ID NO: 8
265 <211> LENGTH: 18
266 <212> TYPE: DNA
267 <213> ORGANISM: Artificial Sequence
269 <220> FEATURE:
270 <223> OTHER INFORMATION: Description of Artificial Sequence:
271      Oligonucleotide

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RAW SEQUENCE LISTING

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Input Set : A:\C2420011.app

Output Set: N:\CRF3\03252002\I822080B.raw

273 <400> SEQUENCE: 8
274 cgataggggt agcgaatg 18
277 <210> SEQ ID NO: 9
278 <211> LENGTH: 20
279 <212> TYPE: DNA
280 <213> ORGANISM: Artificial Sequence
282 <220> FEATURE:
283 <223> OTHER INFORMATION: Description of Artificial Sequence:
284 Oligonucleotide
286 <400> SEQUENCE: 9
287 acgaccaatt tacagcccag 20
290 <210> SEQ ID NO: 10
291 <211> LENGTH: 23
292 <212> TYPE: DNA
293 <213> ORGANISM: Artificial Sequence
295 <220> FEATURE:
296 <223> OTHER INFORMATION: Description of Artificial Sequence:
297 Oligonucleotide
299 <400> SEQUENCE: 10
300 gttgtacaaa cgcttcctc agc 23
303 <210> SEQ ID NO: 11
304 <211> LENGTH: 20
305 <212> TYPE: DNA
306 <213> ORGANISM: Artificial Sequence
308 <220> FEATURE:
309 <223> OTHER INFORMATION: Description of Artificial Sequence:
310 Oligonucleotide
312 <400> SEQUENCE: 11
313 atttggggaa tctttgtcc 20
316 <210> SEQ ID NO: 12
317 <211> LENGTH: 20
318 <212> TYPE: DNA
319 <213> ORGANISM: Artificial Sequence
321 <220> FEATURE:
322 <223> OTHER INFORMATION: Description of Artificial Sequence:
323 Oligonucleotide
325 <400> SEQUENCE: 12
326 acagtacgga ttgggtagcg 20

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/822,080B

DATE: 03/25/2002

TIME: 10:41:44

Input Set : A:\C2420011.app

Output Set: N:\CRF3\03252002\I822080B.raw

L:11 M:270 C: Current Application Number differs, Replaced Application Number
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:241 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:244 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:247 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6